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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,741

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Derek Turner

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EXAMINER

MAI, HAO D

ART UNIT

PAPER NUMBER

3732

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,741	Applicant(s) TURNER, DEREK	
	Examiner HAO D. MAI	Art Unit 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 15-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/31/2008; 07/17/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the applicant is trying to claim by "symmetrical to the axis of rotation".

The claims are being rejected under prior art as best understood: the claimed cross-section(s) are interpreted as having a rotational symmetry as shown in Figure 3d of the Drawings submitted 06/20/2005.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-2, 4-10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helfenbein (2004/0161723 A1) Quinn (5,924,865).**

Regarding claim 1, Helfenbein discloses a medical or dental handpiece 1 capable of high speed comprising: a handle, a drive head (Fig. 1) connected to the hand portion and forming a gear housing; a gear 9 in the gear housing capable of rotation about an axis of

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rotation and having an axial tool bore for receiving a shaft of a rotatable tool 3 insertable into the handpiece; and a pair of axially spaced apart bearings 12 and 13 for rotatably supporting the gear in the gear housing. The handpiece further includes a torque transfer arrangement 8 for transferring torque generated by the gear 9 to tool 3 with a shaft portion 10 having a regular hexagon cross section (paragraphs 11, 20-21), which is non-circular cross-section and having a rotational symmetry. The torque transfer arrangement 8 also include a locking socket 11 for receiving the shaft portion 10 and having a complementary cross-section being rotationally symmetrical for locking the shaft portion against rotation in the socket while permitting axial insertion of the shaft portion into the locking socket, the locking socket 11 being connected to the gear for rotation therewith (Fig. 1; paragraphs 11, 20-21).

Helfenbein discloses the invention substantially as claimed. However, Helfenbein fails to disclose a turbine system. Quinn discloses a dental/medical device operated by a gear system; Quinn further discloses that such gear could be replaced with a turbine system (column 8 lines 60-64). It is also well known in the art of medical/dental handpieces that a turbine system may be used in place of gear system to operate a handpiece. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Helfenbein by substituting the gear system with a turbine system as a suitable alternative operating system while still obtaining the same and/or predictable results.

As to claim 2, Helfenbein shows the locking socket 11 to be integrated into the gear and is an enlarged portion of the tool bore for receiving a tool with a shaft portion in the form of a radially enlarged locking boss 10 having a diameter larger than the a diameter of the shaft of the tool.

Regarding claims 7 and 10, Helfenbein as modified with a turbine system, disclosed all the limitations for the claimed torque transfer arrangement as detailed above with respect to claims 1-2.

As to claims 4-5, 8-9, and 12-13, Helfenbein discloses the invention substantially as claimed including an integrated/incorporated locking socket. However, Helfenbein fails to disclose a locking socket being a spindle insertable/receivable into the tool bore, the locking socket having a rounded-shaped protrusion. Quinn discloses a dental/medical handpiece having a locking socket being a hollow spindle/chuck 13 that is receivable or insertable in the tool bore 23/24 and fastened therein (Fig. 1). The spindle/chuck 13 is shown to have a cylindrical bore for receiving the shaft portion 17 of the tool 15 and having a protrusion 77 (Fig. 1) extending radially inwardly into the cylindrical bore for locking the shaft portion 17 at terminal portions 19-22 to the spindle against rotation, while permitting axial insertion of the tool's shaft into the locking socket/chuck 13. The protrusion 77 is shown to have a rounded shape for automatically directing the shaft portion past the protrusion to achieve a self-alignment of the shaft portion in the locking socket/chuck during insertion of the tool. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Helfenbein by making the locking socket being an insertable spindle/chuck instead of being integrated as taught by Quinn with the turbine/gear system while still obtaining the same and/or predictable results. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to include the radial protrusion to the spindle/chuck in order to lock the tool to the spindle against rotation while permitting axial insertion and self-alignment of the tool's shaft into the spindle/chuck.

As to claims 6 and 14, Helfenbein is silent to a burr retaining arrangement. Quinn discloses a burr retaining arrangement including arm 65 along with push button 105 that are

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complementary to the shaft 17 and capable of releasably retaining bur 15 (Figs. 1-2; column 7 lines 22-32). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a burr retaining arrangement as taught by Quinn to Helfenbein's handpiece in order to releasably retain the tool, allowing for an interchange of a variety of tool tips.

5. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helfenbein (2004/0161723 A1) in view of Cardarelli (6305935 B1).

Helfenbein discloses the invention substantially as claimed including a regular hexagonal cross-section which is non-circular and rotationally symmetric. However, Helfenbein fails to disclose the cross-sections being triangular. Cardarelli teaches of a bur shaft having a triangular cross section for increasing rotational retention (column 3 lines 11-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Helfenbein by making the non-circular cross-sections being of a triangular shape in order to increase rotational retention as taught by Cardarelli. Furthermore, such modification is merely a change in shape and/or configurations, which is a matter of design choice well within the skill of an artisan in order to obtain optimum results. See *MPEP* § 2144.04.

Response to Arguments

6. Applicant's arguments filed 03/18/2007 have been fully considered but they are not persuasive and/or moot in view of new ground(s) or rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See *MPEP* § 706.07(a). Applicant

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is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAO D. MAI whose telephone number is (571)270-3002. The examiner can normally be reached on Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hao D Mai/
Examiner, Art Unit 3732

**/John J Wilson/
Primary Examiner, Art Unit 3732**

